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EXAMINER

HYUN, PAUL SANG HWA

ART UNIT	PAPER NUMBER
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1743

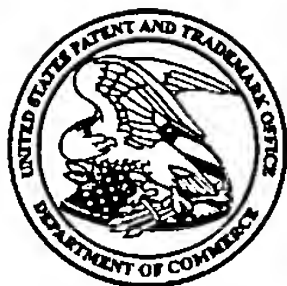
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PAPER

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/625,637
Filing Date: July 23, 2003
Appellant(s): SCHROEDER ET AL.

MAILED
AUG 08 2007
GROUP 1700

Lynne Blank

For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed on 13 April 2007 appealing from the Office action mailed 13 November 2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

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4,331,444	Mihara et al.	5-1982
4,837,168	De Jaeger et al.	6-1989

(9) Grounds of Rejection

The following ground of rejection is applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims **24-39** are rejected under 35 U.S.C. 103(a) as being unpatentable over Rembaum et al. (US 4,929,400) in view of Mihara et al. (US 4,331,444) and De Jaeger et al. (US 4,837,168).

Rembaum et al. disclose polymeric microspheres adapted to be used for immunoassays and a method for producing them. The reference discloses that the microspheres are acrylic (see Abstract) and can range from 1000 Angstroms to 100 microns in size (see line 14, col. 6). Each microsphere comprises functional groups (i.e. aldehyde) capable of binding proteins (see line 65, col. 7) and a dye for visually detecting the microspheres (see lines 26-30, col. 7). However, the reference does not disclose that the dye comprises a photographic coupler.

De Jaeger et al. disclose latex label adapted to be used for immunoassays. The latex particles are coupled to dye-forming couplers that can be developed to form cyan, magenta or yellow dyes. The dyes are used to visually detect the occurrence of a

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reaction of interest. The reference discloses that phenol or a naphthol type compounds produce cyan dyes, pyrazolone type compounds form magenta dyes and open chain ketomethylene type compounds form yellow dyes

Mihara et al. disclose a method for immunoassay using a phenol or a naphthol coupler, a pyrazolone coupler, and an open chain ketomethylene coupler that are developed by oxidizing developing agents to form cyan, magenta or yellow dyes, respectively (see line 55 col. 8 – line 43 col. 9). The reference discloses that the couplers are dissolved in high boiling solvents (i.e. dibutyl phthalate) before the solution is applied to a substrate or support (see lines 3-25 col. 10).

It would have been obvious to one of ordinary skill in the art to load the microspheres disclosed by Rembaum et al. with the dye-forming couplers dissolved in high boiling solvents disclosed by Mihara et al. and de Jaeger et al. since the availability of 3 dye colors provides versatility and diversity in detection.

(10) Response to Argument

Appellants provide two main arguments to appeal the grounds of rejection.

A. The References Fail to Disclose All of the Presently Claimed Limitations:

Appellants provide support for this argument by stating that Rembaum et al. fail to disclose the claimed photographic coupler and the claimed solvent, De Jaeger et al. fail to disclose the claimed microspheres and the claimed solvent, and Mihara et al. fail to disclose the claimed microspheres. It should be noted that it is the combination of the references that discloses all the limitations. The combination in light of the disclosure of the cited references would have been obvious to one of ordinary skill in the art.

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Although Rembaum et al. fail to disclose the use of the claimed coupler, the reference does disclose incorporating a dye into the microsphere as a way to identify the microsphere. De Jaeger et al. and Mihara et al. both disclose the use of the claimed coupler as a dye to tag or identify antibody/antigen complexes. Furthermore, Mihara et al. disclose dissolving the claimed coupler in a solvent having a high-boiling point in order to deliver the coupler to the desired target. In light of the disclosure of the references, it would have been obvious to one of ordinary skill in the art to substitute the dye disclosed by Rembaum et al. with the coupler disclosed by De Jaeger et al. and Mihara et al. wherein the coupler is introduced into the microspheres disclosed by Rembaum et al. using a solvent having a high-boiling point. The different color combinations of the coupler (i.e. cyan, magenta and yellow) would enable versatility and diversity in detection of the microspheres.

To rebut the rejection, Appellants cite U.S. Patent 5,585,230 to demonstrate that it is allegedly desirable to remove the high-boiling solvent disclosed by Mihara et al. after incorporating the couplers to its desired target. This argument is not persuasive because US 5,585,230 is directed towards photography, and thus not pertinent to immunoassay. Specifically, the patent discloses that removing the solvent that is used to dissolve the coupler minimizes the layers of a photographic material, thus improving image sharpness displayed on the photographic material (see lines 10-20, col. 1). It is unclear how this information pertains to the disclosure of Rembaum et al., Mihara et al. or De Jaeger et al., which are directed towards immunoassay. Moreover, as conceded by Appellants, the act of removing the solvent as disclosed in US 5,585,230 is

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desirable, not **required**. Thus, even if the disclosure of US 5,585,230 did pertain to immunoassay, the disclosure fails to demonstrate that the solvent **must** be removed.

B. The References Lack Likelihood of Success and Motivation for

Combination:

Appellants provide support for this argument by stating that the cited references fail to solve the same problem that the claimed invention is intended to solve.

Specifically, Appellants argue that in the claimed invention, the incorporation of the high-boiling solvent into the microsphere is to enhance color development. Appellants argue that the cited references fail to address this advantage. However, the fact that Appellants have recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. In this instance, the Office action provided a different advantage for incorporating the coupler disclosed by De Jaeger et al. and Mihara et al. into the microspheres disclosed by Rembaum et al. The incorporation of the coupler into the microspheres disclosed by Rembaum et al. would enhance detection of the microspheres because the coupler can be in the form of three different colors.

Appellants also argue that the combination of the references lack likelihood of success because according to Appellants' specification, "Particles in the submicronic range are difficult to detect by optical means. In addition, a polymeric bead solvated with a color forming moiety is difficult to develop into color using chemical means." This argument is not persuasive because Rembaum et al. demonstrate how submicronic

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particles can be successfully dyed and detected using optical means. Specifically, Rembaum et al. disclose incorporating a dye in submicronic polymeric particles to tag or identify the particles.

(11) Related Proceeding(s) Appendix

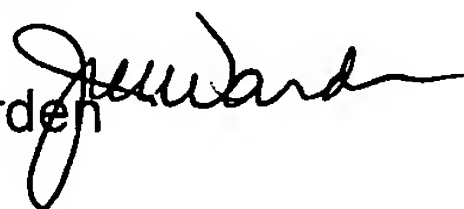
No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.


For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Paul Hyun

Conferees:

Jill Warden 


Jill Warden
Supervisory Patent Examiner
Technology Center 1700

/Kathryn Gorgos/

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